

EXHIBIT 7

1 UNITED STATES DISTRICT COURT
2 EASTERN DISTRICT OF WASHINGTON
3 CITY OF SPOKANE, a municipal)
4 corporation, located in the)
5 County of Spokane, State of)
6 Washington,)
7)
8 Plaintiff,)
9)
10 vs.) Case No.
11) 15-cv-00201-SMJ
12 MONSANTO COMPANY, SOLUTIA INC.,)
13 and PHARMACIA CORPORATION, and)
14 DOES 1 through 100,)
15)
16 Defendants.)
17 _____)
18 ** REVISED **
19 VIDEO DEPOSITION OF JOEL BOWDAN, III
20 NOVEMBER 14, 2019
21 SAN DIEGO, CALIFORNIA
22
23 Reported by:
24 Cynthia J. Vega, RMR, RDR, CSR 6640, CCRR 95
25 Job No. 171797

1 CSOs to the river. The specifics with regard to the
2 ultimate agreement between the State and the City to
3 reduce to, on average, not more than one overflow per
4 CSO outfall over a 20-year running average was adopted,
5 if I recall correctly, sometime -- I want to say late
6 '90s, early 2000s was probably the more appropriate time
7 frame.

8 Q. Okay.

9 A. My understanding is that the earlier
10 requirements to begin reducing CSOs did not yet have
11 that provision in it.

12 Q. Okay. So with that correction to the timing,
13 you agree with my question? Having made that correction
14 to the timing, you agree with my question; correct?

15 A. Having made that correction and ultimately
16 having the requirement to reduce CSOs to not more than
17 one overflow per outfall per year on a 20-year average,
18 that would then be correct.

19 Q. And isn't it true that even to this day, the
20 City has not been able to meet that obligation with
21 respect to all of the CSO outfalls?

22 A. With respect to all of the outfalls as it
23 stands today, that question would be -- the answer would
24 be yes. However, the City has been making progress as
25 it is going through the implementation of its CSO

1 minimization program. And so there are CSOs that now
2 today meet that requirement. And the expectation is
3 that when the current project is complete and all the
4 work on the CSOs have been completed that the City will
5 then come into compliance with that requirement. So
6 it's in process.

7 Q. I understand. But my question was: As of
8 today, there is a large majority of those CSO outfalls
9 where the City does not meet compliance with respect to
10 that overflow limitation; correct?

11 MR. LAND: Objection. Mischaracterization of
12 his prior question, I guess. Misrepresentation.

13 But you can answer.

14 THE WITNESS: Okay. You used the term a large
15 number, which is vague. As it stands today, my
16 recollection is that the number has been whittled down
17 to just a relative few of the outfalls. There is as of
18 today, I believe, only three or four CSO projects that
19 remain that are not yet complete, so out of the 19 or 20
20 CSOs. So the characterization of the large number would
21 be incorrect.

22 BY MR. HAASE:

23 Q. What is your best estimate as to the number of
24 CSO outfalls that are still in violation of that one
25 incident requirement?

1 A. My understanding would be that as of today,
2 that number would be about four -- somewhere between
3 four to six at most.

4 Q. Okay. So even today there are, by your
5 estimation, from four to six CSO outfalls that are
6 overflowing more than once on a 20-year annualized
7 basis; correct?

8 MR. LAND: Objection. Mischaracterization of
9 prior testimony.

10 Go ahead.

11 THE WITNESS: As of today, my estimation would
12 be that there's about four to six outfalls where the
13 work has not yet been completed that, if they were to
14 overflow today or over the course of this year up to
15 this point, may or may not meet the requirement of
16 reducing overflows to one per year on a 20-year average
17 basis.

18 BY MR. HAASE:

19 Q. Okay. And you would agree that the problem
20 with that is then those non-PCB constituents that we
21 discussed earlier -- the phosphorous, the fecal
22 coliform, the BOD, the metals -- are directed
23 immediately into the Spokane River; correct?

24 A. If those CSOs overflow at this present time,
25 those overflows that -- would occur.

1 not require the approval of the EPA. So states can set
2 lower requirements on their own. States have that
3 autonomy to do that.

4 What they cannot do is they cannot set a limit
5 that is higher than what the federal requires. So the
6 federal sets the baseline, and then each state has the
7 ability to set their own lower requirements apart. So
8 they can go lower, but they cannot go higher.

9 Q. You understand that the City of Spokane
10 vehemently objected to the 7 ppq PCB water quality
11 standard; correct?

12 A. I am aware of that.

13 Q. Okay. And, in fact, the mayor of Spokane,
14 Mayor Condon, wrote letters to the Washington State
15 Department of Ecology and to the EPA itself objecting to
16 the application of the 7 ppq PCB water quality standard;
17 correct?

18 A. I'm not aware of that specific. I'm only aware
19 of generalities that the City did originally object to
20 the 7 when the 7 was initially proposed by the EPA in
21 earlier correspondence.

22 Q. And are you aware that the City objected for
23 several reasons, first and foremost, that it was
24 technologically infeasible to even achieve the 7 ppq PCB
25 water quality standard; correct?

1 A. Yes, correct.

2 Q. And you would agree with that; correct?

3 A. I would agree with that, yes, based on current
4 available technology.

5 Q. Right.

6 A. I actually opine on that in portions of my
7 opinion.

8 Q. Right. And just so the record is clear, you
9 would agree that the City raised that as an objection,
10 and separately you, in your capacity in wastewater
11 treatment, agree that it -- with the City's position
12 that it is technologically infeasible to even achieve
13 that 7 ppq standard; correct?

14 A. I need to pare my response a bit. You used the
15 term "technologically infeasible." There are potential
16 technologies that may be available.

17 Q. Okay. I'm not talking about potential
18 technologies.

19 A. But I'm just saying, because you made it a very
20 blanket or a very hard statement, so I just want to make
21 sure that I'm answering.

22 Q. I'm talking about currently today. I'm not
23 talking about -- I mean, there are potential
24 technologies out there that could rocket all six of us
25 to Pluto and back in a day. I'm not talking about those

1 potential technologies. I'm talking about --

2 A. Neither am I.

3 Q. Okay. Okay.

4 A. So just to set the record straight.

5 Q. As of today, you agree that it is
6 technologically infeasible to even achieve a 7 ppq PCB
7 water quality standard; correct?

8 A. I would say that as of today, technologies that
9 are available have not been proven at this project
10 scale.

11 Q. Okay.

12 A. That would be my response to that. So not that
13 it's technologically infeasible, but that at this scale
14 it has not yet been proven to be able to get down to
15 that level consistently.

16 Q. Okay. And didn't the City also object to the
17 7 ppq PCB water quality standard on the basis that there
18 was no evidence that the -- that that standard will
19 provide an increased health benefit for its citizens?

20 A. I can't answer to that.

21 Q. Okay. You'll be able to in a moment.

22 I'm going to mark this next document as
23 Exhibit 8.

24 (Exhibit 8 was marked for identification.)

25 ///

1 human health criteria or water quality standard for PCBs
2 is set forth in Chapter 173-101A of the Washington
3 Administrative Code; correct?

4 A. So as you mentioned that specific portion, I
5 don't know if that has currently been modified to the 7.

6 Q. Okay. So you don't know whether that portion
7 of the Washington Administrative Code currently reflects
8 7 ppq or 170 ppq; correct?

9 A. That is correct.

10 Q. And at the time that you issued your report in
11 this case, you did not know whether that particular
12 section of the Washington Administrative Code set forth
13 a standard of 7 ppq or 170 ppq; correct?

14 MR. LAND: Objection. Misleading.

15 Go ahead.

16 THE WITNESS: As it relates to that specific
17 section of that code --

18 BY MR. HAASE:

19 Q. That's what I'm asking.

20 A. Right. You're asking that specific --

21 Q. Yes.

22 A. No, I did not.

23 Q. Okay. And you would agree that if the
24 applicable PCB water quality standard for the Spokane
25 River was 170 ppq instead of 7 ppq, that would change

1 Dr. Trapp's calculation of the target in-stream PCB load
2 at Nine Mile monitoring location; correct?

3 A. I would agree it would change that calculation.

4 Q. Okay.

5 A. Because it would be a different basis for it.

6 Yes.

7 Q. Right. So -- and that's -- you've already said
8 and your report indicates that you've relied on
9 Dr. Trapp's calculation of that target in-stream PCB
10 load based on a human health criteria or PCB water
11 quality standard of 7 ppq; correct?

12 A. That's correct.

13 Q. Okay. And doing a little bit of math, in order
14 to determine how that target in-stream PCB load would be
15 changed, you have to -- you would divide 170 ppq by the
16 7 ppq; correct? And I will allow you to use a
17 calculator or, you know, sheet of paper if you want as
18 we go here. But you would --

19 MR. LAND: You can use a calculator if you
20 need.

21 BY MR. HAASE:

22 Q. Sure.

23 A. Go ahead.

24 Q. Okay. So you would basically determine that
25 the 170 ppq water quality standard is 24.3 times higher

1 significant source of PCBs to the Spokane River
2 contributing to the impairments of the beneficial uses
3 in the river; is that correct?

4 A. Yes. I would say I wouldn't use the term
5 "significant."

6 Q. Okay. But yes or no to my question: Is that
7 fair to say?

8 A. Yes. In terms of my correction, I would not
9 use that term "significant" to describe that.

10 Q. Okay. But if you're not using the term
11 "significant," you would also agree that it is not then
12 contributing to the impairment to the beneficial uses in
13 the river; correct?

14 A. That's not what I'm saying.

15 MR. LAND: Objection.

16 THE WITNESS: I wanted to make sure that's
17 clear that's not what I'm saying. It doesn't mean it's
18 not contributing to the impairment of the river, but
19 that the term that I would use, I would probably not use
20 "significant."

21 BY MR. HAASE:

22 Q. Okay. So you're saying that it's not
23 contributing in a significant way; correct?

24 A. I would say that -- yes, that would be fair to
25 say.

1 BY MR. HAASE:

2 Q. Okay. And you have not done that analysis;
3 correct?

4 A. I have looked at those values before related to
5 the analysis I performed, but, again, I'm going off
6 memory at this point. I wouldn't be able to, I think,
7 provide you with a answer relative to your question.

8 Q. So you looked at it in conjunction with the
9 percentages that you came up with of 31.5 percent plus
10 68 percent from the CSOs and the Riverside Park
11 Facility, and you determined that, in your opinion,
12 those were significant sources when combined together to
13 represent 99.5 percent, but you are not prepared today
14 to tell me whether you would consider 2.8 percent to be
15 a significant source of PCBs to the river? That's what
16 you're telling me under oath here today; correct?

17 A. That's what I'm saying, yes.

18 Q. Okay.

19 A. Okay.

20 MR. LAND: We should probably take lunch in the
21 next 15 or so.

22 MR. HAASE: That's fine.

23 BY MR. HAASE:

24 Q. You're aware, Mr. Bowdan, that the Spokane
25 River currently meets a 170 ppq PCB water quality

1 standard; correct?

2 MR. LAND: Objection. Mischaracterization of
3 the evidence.

4 Go ahead.

5 THE WITNESS: I'm going to say that I am not
6 aware that it currently meets that, based on the current
7 loadings. I'm sure some of the other --

8 BY MR. HAASE:

9 Q. Okay.

10 A. -- expert opinions might be able to qualify
11 that.

12 Q. We will mark -- sure. We'll mark -- I believe
13 you told me that you read the Mike Coster deposition;
14 correct?

15 A. Yes, I did read it.

16 MR. HAASE: We'll mark this as Exhibit 8.

17 THE REPORTER: 9.

18 MR. HAASE: 9. Thank you.

19 (Exhibit 9 was marked for identification.)

20 BY MR. HAASE:

21 Q. Okay. If you'll turn to page 24, lines 2
22 through 8. Actually, you'll see on page 22 that we
23 are -- I'm reviewing with Mr. Coster the 2016
24 comprehensive plan to reduce PCBs in the Spokane River,
25 which we marked as Coster Exhibit 1. Do you see that

1 reference?

2 A. Yes, I do see the reference, line 10 on
3 page 22.

4 Q. Right. And then over on page 23, line 4, it
5 starts -- he goes -- we go to page 10, section 2.4.3,
6 and we talk about sampling events conducted by the
7 Spokane River Regional Toxic Task Force in 2014, 2015,
8 and through June of 2016. Do you see that?

9 A. Yes.

10 Q. Okay. And then we are discussing the results
11 as reported in table 1 over on page 11 of that document.
12 And you'll see at the top of 24, page 24, there's a
13 quote, "Average concentrations at all stations show
14 compliance with the current Washington State water
15 quality standard of 170 ppq."

16 And you will see -- rather than going with
17 Coster's testimony, I'm going to mark as Exhibit 10 the
18 comprehensive plan that we are referring to in the
19 Coster deposition.

20 (Exhibit 10 was marked for identification.)

21 BY MR. HAASE:

22 Q. All right. And if you will -- I've handed you
23 this 2016 comprehensive plan to reduce PCBs in the
24 Spokane River produced by LimnoTech at the request of
25 the Spokane River Regional Toxic Task Force; correct?

1 A. Correct.

2 Q. It indicates that the plan was accepted by the
3 task force November 16, 2016; correct?

4 A. Correct.

5 Q. All right. So we'll go to page 10. And you'll
6 see in the first sentence under 2.4.3, "Current River
7 Status," that table 1 provides a summary of the ambient
8 surface water PCB concentration data collected from 2014
9 to 2016; correct?

10 A. I'm sorry. Where are you at again?

11 Q. Right here.

12 A. Okay. Yes.

13 Q. Okay. And you will agree that over on table 1
14 that the average concentrations at all stations show
15 compliant with the Washington State water quality
16 standard of 170 ppq; correct?

17 A. Okay. Which -- let's see here. Okay. I can
18 see that the values vary, but they appear to be dropping
19 at all of the station locations as we proceed from 2014
20 through 2016. So in direct answer to your question,
21 there are several sites that in 2014 --

22 Q. Let me just cut to the chase, because there's
23 an actual sentence in this document. If you go back to
24 the previous page, on page 10, towards the bottom of
25 this paragraph, does it not say "Average concentrations

1 at all stations show compliance with the current
2 Washington State Water Quality Standard of 170 picograms
3 per liter"? Did I read that correctly?

4 A. It does say that.

5 Q. Okay. And if you will turn to the Lars Hendron
6 deposition that we have previously marked, and if you'll
7 turn to page 304, lines 3 through 10:

8 "Question: So once again in -- as of
9 February 20, 2019, the Spokane River PCB concentrations
10 are less than 170 ppq; correct?"

11 Mr. Hendron's answer on behalf of the City:
12 "Based on these citations, yes."

13 Next question: "Are you aware of any test data
14 that would suggest that the average concentrations are
15 greater than 170?"

16 His answer: "No."

17 Did I read that correctly?

18 A. Yes, you did.

19 Q. Okay. And you don't have any reason to
20 disagree with that; correct?

21 A. I do not, based upon his response to the
22 question and the date --

23 Q. Okay.

24 A. -- noted in the question.

25 Q. All right. Thank you.

1 And you'll note on the first page of the
2 deposition transcript that he offered testimony on
3 June 7, 2019; correct?

4 A. Yes, that is correct.

5 Q. So as of June 7, 2019, Mr. Hendron was not
6 aware on behalf of the City of any test data above the
7 170 ppq water quality standard; correct?

8 A. That is correct.

9 MR. HAASE: Okay. Okay. I think this would be
10 a good spot for a break.

11 MR. LAND: Sounds good.

12 THE VIDEOGRAPHER: This is the end of media
13 number 2. The time is 12:29 p.m. We are now off the
14 record.

15 (Lunch recess, 12:29 p.m.)

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1 SAN DIEGO, CALIFORNIA

2 THURSDAY, NOVEMBER 14, 2019, 1:39 P.M.

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4 THE VIDEOGRAPHER: This is the beginning of
5 media number 3 in the deposition of Joel Bowdan, III.
6 Time is 1:39 p.m. We are back on the record.

7 BY MR. HAASE:

8 Q. All right. Mr. Bowdan, you would agree that
9 PCBs are not the subject of any Spokane River TMDLs;
10 correct?

11 A. That is correct.

12 Q. But Spokane River TMDLs do, in fact, exist with
13 respect to DO, BOD, ammonia, various metals like zinc
14 and cadmium; correct?

15 A. I know that the TMDLs include dissolved oxygen,
16 BOD, and also phosphorous, so I can't confirm whether
17 metals are part of that.

18 Q. And ammonia as well; correct?

19 A. Ammonia as well, yes. Ammonia as well.

20 Q. And will you also confirm for me that there are
21 no numerical PCB discharge limits that apply to the
22 Riverside Park Facility; correct?

23 MR. LAND: Objection. Vague and misleading.
24 You can answer.

25 THE WITNESS: The current plant permit has been

1 facility; correct?

2 "Answer: Yes."

3 You'll agree that that's the sworn testimony
4 that Lars Hendron offered on behalf of the City with
5 respect to construction of the CSO projects and the NLT
6 project; correct?

7 A. Yes.

8 Q. Okay. And I believe you've already agreed that
9 the City is not subject to any quantitative or numerical
10 limit with respect to the discharge of PCBs into the
11 Spokane River; correct?

12 A. With regard to their current permit that is in
13 place, that would be correct.

14 Q. And with respect to any TMDLs; correct?

15 A. Yes. With respect to the -- with the river
16 dissolved oxygen TMDL, that would be correct.

17 Q. Okay. So there's no legal requirement that
18 treated effluent must be below 7 ppq; correct?

19 A. At this present moment, there's no requirement
20 that the effluent at the plant meet that requirement at
21 this very moment.

22 Q. Okay. And that's not just at this very moment,
23 but when you issued your opinions in this case in your
24 report dated October 11, 2019; correct?

25 A. Yes.

1 Q. And similarly, there is no standard that
2 requires CSO discharges to be below 7 ppq; correct?

3 A. In terms of PCB?

4 Q. That's what I meant. I'm sorry. That
5 require -- let me rephrase.

6 You'd agree that there is no legal standard
7 requiring CSO PCB discharges to be below 7 ppq; correct?

8 A. At the moment, specific to the discharge
9 itself, no.

10 Q. When I say that's correct and you say no, it
11 sounds on the transcript like you're saying that's not
12 correct. So I'm going to do it --

13 A. Okay.

14 Q. -- one more time. And I don't think you need
15 the qualification that you added, because that's the
16 question I asked.

17 Isn't it true that there is no legal standard
18 that requires CSO PCB discharges to be below 7 ppq?
19 Isn't that true?

20 A. At the moment, yes.

21 Q. And that was also true when you issued your
22 opinions in this case in your October 11, 2019, report;
23 correct?

24 A. Current as of the time of the opinion, that
25 would be correct.

1 Q. Okay. So that was true in October when you
2 formed and issued your opinions, and it's still true
3 today; correct?

4 A. Let me clarify that the limits that we're
5 talking about, those are pending. So as it relates to
6 the specific discharge from the RP -- WRP and the CSOs,
7 that is correct. As I've mentioned, the limits are not
8 there.

9 Q. Okay. There's no clarification necessary. If
10 you listen to my question, I asked you to confirm that
11 both today and at the time you issued your report
12 opinions to please confirm that it is, in fact, true
13 that there was and is no legal standard requiring CSO
14 PCB discharges to be below 7 ppq. That's correct?

15 MR. LAND: Objection. Asked and answered.

16 BY MR. HAASE:

17 Q. Right?

18 A. That would be true based on -- yes.

19 Q. Yes. Okay. That's --

20 A. I just wanted to make sure I'm clearly
21 understanding the question, which I believe I do.

22 Q. Okay. Great. Well, then you've answered it,
23 and now we can move on.

24 And isn't it true that the City's CSO storage
25 tanks in the MS4 basins were planned before any PCBs

1 So with that understanding of the units being
2 listed in micrograms per liter, can you tell me what the
3 listing is for the human health criteria for PCBs
4 reflected in the Washington Administrative Code as of
5 today?

6 A. That would be equivalent to the 170 picograms
7 per liter.

8 Q. Okay. And so you will agree that the
9 7 picograms per liter human health criteria that was the
10 basis for your calculations and underlying your opinions
11 in this case differs from the 170 picograms per liter
12 figure reflected in the Washington State Administrative
13 Code for PCB human health criteria; yes or no?

14 A. Yes. Based upon what's shown here, that would
15 be -- rephrase that again. I want to make sure that I
16 answer this correctly.

17 Q. Will you please confirm for me, having looked
18 at the Washington Administrative Code provision that I
19 have provided to you, that the calculations underlying
20 your opinions in this case are based on a human health
21 criteria of 7 ppq, or picograms per liter, which is
22 different from the actual human health criteria of
23 170 picograms per liter, or ppq, reflected in the
24 Washington Administrative Code for PCBs; correct?

25 A. That would be correct, based upon what I'm

1 seeing here.

2 Q. Okay. And that is also true with respect to
3 Dr. Trapp's calculations, who also relied on the 7 ppq
4 human health criteria; correct?

5 A. I'll let Dr. Trapp answer that question with
6 regard to his calculation of that and what he used.

7 Q. Well, you, in fact, reference his calculations
8 throughout your report as incorporated into your
9 opinions; correct?

10 A. Yes, I did.

11 Q. Okay. Well, on that basis then, I would like
12 you to confirm for me that Dr. Trapp, in fact, used a
13 7 ppq, or picograms per liter, human health criteria
14 that is different from what is reflected in the
15 Washington Administrative Code for PCBs, which is
16 170 picograms per liter; correct?

17 MR. LAND: Objection. Vague.

18 THE WITNESS: So his calculations that I
19 utilized that are in my opinion were based on the
20 7 picograms per liter, or ppq.

21 BY MR. HAASE:

22 Q. Okay. And that's -- you agree that that's
23 different from what the Washington Administrative Code
24 sets forth; correct?

25 A. In this instance, yes. What I'm reading here,

1 that would be different, yes.

2 Q. And you never consulted the Washington
3 Administrative Code for the PCB human health criteria
4 levels before issuing your -- before making your
5 calculations and issuing your opinions based on those
6 calculations; correct?

7 A. I know that I researched the -- researched this
8 document, because it was referenced. However, because
9 of the -- as I mentioned before, the pending case with
10 the requirement of the 7 and then the withdrawal from
11 the EPA and the current State of Washington's position
12 that the health and human criteria is 7, I utilized
13 the 7. So I'm answering this question in the form of a
14 clarification based upon my understanding of why I used
15 the 7.

16 Q. Well, the Washington -- okay. So are you
17 saying -- are you now saying -- I thought you -- you
18 testified earlier that you hadn't looked at this
19 specific portion of the code for that number.

20 A. So what I'm saying -- what I specifically said
21 then is I could not confirm to you that I had -- you
22 listed the number. I didn't remember or recall the
23 number off of my head with regard to this code. So what
24 I am saying to you is that I have seen this. I did
25 research this document.

1 Q. Okay.

2 A. But I could not recall it.

3 Q. And having seen this, you decided -- yes or no.
4 You decided not to base your calculations and therefore
5 your opinions on the actual human health criteria set
6 forth in the Washington Administrative Code for PCBs;
7 correct?

8 A. That would be correct, based on the explanation
9 that I just provided to you a moment ago.

10 Q. All right.

11 A. Okay.

12 Q. You'd agree with me that if, in fact, the
13 Washington State human health criteria for PCBs is 170,
14 your calculations as to the percentages of PCB loadings
15 representing the necessary load to achieve that human
16 health criteria would be unreliable; correct?

17 MR. LAND: Objection. Vague. And misleading.
18 Go ahead.

19 THE WITNESS: I would say that my opinion,
20 again, was based on the target load calculation at
21 Nine Mile, which was based on the human health criteria
22 of the 7. And so if, indeed, it is determined that we
23 needed to make adjustment to utilize the 170 as the
24 criteria, it's a matter of recalculation. So --

25 ///

1 BY MR. HAASE:

2 Q. But if that was --

3 MR. LAND: Wait one second. I don't think he's
4 finished. Let him finish his answer.

5 THE WITNESS: So as a result of that, the
6 characterization of unreliable, I think, is a question.
7 So that's what I'm questioning right now.

8 BY MR. HAASE:

9 Q. Okay. But it's -- you would need to
10 recalculate, because your current calculations based on
11 the 7 ppq would be unreliable. That was my point;
12 correct?

13 A. But I'm not saying it is unreliable.

14 Q. Your math is correct if the human health
15 criteria is 7 ppq. That's -- I'm not suggesting
16 otherwise.

17 A. Okay.

18 Q. What I'm suggesting is you used those -- you
19 made calculations and came up with percentages of
20 loadings against the human health criteria, and if, in
21 fact, the applicable human health criteria is 170 ppq
22 instead of 7 ppq, the existing calculations in your
23 report would be considered unreliable with respect to
24 the 170 ppq; correct?

25 MR. LAND: Again, objection. Vague and

1 misleading.

2 THE WITNESS: The calculation only as it
3 relates to the calculation of the percentage of the
4 target. Beyond that, the calculations are still
5 reliable. The calculations are still the calculations.

6 BY MR. HAASE:

7 Q. Right. But --

8 A. But it's specific -- so the answer to your
9 question is that I would need to recalculate the
10 percentage based upon the new human health criteria at
11 170 rather than at the 7, but that doesn't affect the
12 remainder of the calculations in the opinion. There are
13 lots of calculations in here so -- that are still true
14 and that still result ultimately in the outcomes outside
15 of this percentage calculation. This percentage
16 calculation would need to be recalculated.

17 Q. And you would agree that any opinion that you
18 have authored in this report that relies in any part on
19 a human health criteria of 7 ppq would, in fact, be
20 unreliable if the human health criteria to be applied is
21 170 ppq; correct?

22 MR. LAND: Objection. Vague.

23 BY MR. HAASE:

24 Q. In that circumstance; correct?

25 MR. LAND: Objection. Vague. Misleading.

1 You can answer.

2 THE WITNESS: Again, only as it relates to the
3 percentage calculation. You're characterizing
4 calculations throughout the opinion, and many of those
5 calculations do not need the 7 ppq requirement. But as
6 it relates to the percentage calculation, that would be
7 correct.

8 BY MR. HAASE:

9 Q. If the applicable human health criteria is
10 170 ppq and you have issued an opinion that relies in
11 part on 7 ppq as the applicable human health criteria,
12 wouldn't you agree that that opinion, to the extent it
13 relies on 7 ppq instead of 170 ppq, would, in fact, be
14 unreliable?

15 MR. LAND: Objection. Vague. Misleading. And
16 incomplete hypothetical.

17 THE WITNESS: So, again, my answer will be with
18 regard to the 7 ppq versus the 170, the percentage
19 calculations performed in comparing and providing the
20 comparison of the load from these facilities to the
21 ultimate or the total in-stream load, those calculations
22 would need to be recalculated in light of the 170. The
23 remaining calculations remain as they are.

24 BY MR. HAASE:

25 Q. You'd agree that the NLT system is not legally

1 Go ahead.

2 THE WITNESS: Certainly it would be a good
3 thing to remove --

4 BY MR. HAASE:

5 Q. Right.

6 A. -- additional contaminants.

7 Q. And total suspended solids, are they subject to
8 TMDL permit requirements, permit allowances?

9 A. I'm sorry. Was that --

10 Q. Total suspended solids?

11 A. Is it a part?

12 Q. Yes.

13 A. Okay. That was the question? Yes.

14 Q. Okay. So, therefore, removing an additional
15 330,900 pounds per year of total suspended solids during
16 those additional four months of NLT operation has to be
17 considered a desirable objective for the City; correct?

18 MR. LAND: Objection. Vague. Incomplete
19 hypothetical.

20 Go ahead.

21 THE WITNESS: Sure. It would be considered
22 desirable.

23 BY MR. HAASE:

24 Q. Okay. And that would also be true for removing
25 an additional 426 pounds of total zinc by operating NLT

1 A. That is correct, as it relates to wastewater.

2 Q. Okay. And can you name one municipal
3 wastewater plant that shuts down a tertiary membrane
4 filtration system for as long as four months?

5 A. I cannot.

6 Q. Okay. Can you name one municipal wastewater
7 membrane filtration system that has been specifically
8 designed and engineered as its primary focus to capture
9 PCBs as opposed to some other constituent like
10 phosphorus?

11 MR. LAND: Objection. Misleading.

12 You can answer.

13 THE WITNESS: I will answer that question. My
14 former firm that I worked with, there is a plant in
15 Bay City, Michigan, that uses membrane -- well, let
16 me strike that.

17 It uses a media-based filtration process for
18 removing PCBs.

19 BY MR. HAASE:

20 Q. That's different from --

21 A. It's slightly different --

22 Q. Okay.

23 A. -- but it's a filtration process. But it is
24 slightly different.

25 Q. Right. It's not a membrane filtration process?

1 MR. HAASE: Okay. And we will mark that as
2 Exhibit 15.

3 (Exhibit 15 was marked for identification.)

4 BY MR. HAASE:

5 Q. What I've handed you is Pall Corporation's
6 microfiltration system operation and maintenance manual
7 for the City of Spokane wastewater management, and the
8 document issuance date was August 2017; is that correct?

9 A. Yes, it is.

10 Q. Okay. And turning to page 104, please, of the
11 manual. At the very top, do you see that it reads,
12 under category 5.3 "Short, Mid & Long Term Shutdown and
13 System Lay-Up"?

14 A. Uh-huh.

15 Q. "A short-term shutdown is a system shutdown
16 that lasts for less than 16 hours. A mid-term shutdown
17 is a system shutdown that lasts for 16 to 72 hours. A
18 long-term shutdown is greater than 72 hours. Pall
19 Corporation recommends avoiding system shutdowns if
20 possible." Did I read that correctly?

21 A. Yes, you did.

22 Q. Okay. And are you familiar enough with
23 membrane systems to tell me why Pall Corporation would
24 recommend avoiding system shutdowns if possible?

25 A. Yes, I'm familiar enough with membrane

1 technology. They are very similar in this regard.
2 Membranes as a whole and on a general -- just from a
3 general level like to be run rather than not run or have
4 periods of shutdown. Does not eliminate the ability to
5 shut down, but just their general operation character
6 that they like to be run.

7 Q. Okay. And is that -- running it, does that
8 help promote longevity of the membranes, that type of
9 thing?

10 A. It's --

11 Q. Why do they like to be run?

12 A. That's difficult to say with regard to the
13 longevity aspect. When membranes are shut down, there
14 are specific requirements to prevent things like
15 biological growth that could occur. So there's some
16 maintenance that's required. So in the cases where
17 shutdown is not necessary, the preference is to keep
18 membranes running so that that way cycles of cleaning,
19 so on and so forth, continue to happen.

20 Q. Okay. When you say when shutdown is not
21 necessary, what are the circumstances where shutdown
22 would be necessary? For example, for a repair or a
23 mandatory cleaning?

24 A. Repair, cleanings, cases where membranes are
25 sized so that you have units on standby. You don't need

1 to run all the units consistently at the time, so there
2 are periods of time where those units are shut down. So
3 it's implementation-specific. It's just based on the
4 nature of what's needed at a particular plant site in
5 terms of when to run or if there's a reason why not to
6 run a membrane system.

7 Q. Okay. And for this particular plant system,
8 are you familiar enough with this membrane technology as
9 confirmed in the Pall operation manual that it is best
10 to avoid shutting down the system if possible; correct?

11 A. Yes. Based upon my prior response and
12 knowledge of membranes, if you can keep them running,
13 they tend to run better and you minimize the cleaning
14 aspect of those.

15 Q. Okay. Because when you shut down a membrane
16 system for as long as four months, there is a very real
17 danger of biological growth in the membranes, fouling
18 the membranes and ruining the membranes; correct?

19 A. That would be the case if the specific shutdown
20 and cleaning requirements aren't followed during those
21 long-term periods of shutdown.

22 Q. Right. And that -- those protocols are
23 detailed and important in terms of perhaps a chlorine
24 soak, some type of a -- you know, soaking the membranes
25 in some type of a chlorine bath to make sure that there